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ORTHOPTERA FROM THE SANTA RITA MOUNTAINS, ARIZONA, COLLECTED BY THE UNIVERSITY OF KANSAS EXPEDITION, *James A. G. Rehn.*

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THE KANSAS UNIVERSITY SCIENCE BULLETIN.

VOL. V, No. 17.] MARCH, 1910. [WHOLE SERIES VOL. XV, No 17

ORTHOPTERA FROM THE SANTA RITA MOUNTAINS, ARIZONA, COLLECTED BY THE UNIVERSITY OF KANSAS EXPEDITION.

BY JAMES A. G. REHN.
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Plate LXIII.

THE collection forming the basis of this paper was made in the Santa Rita range during the summer of 1907 by the University Museum expedition under the late Prof. F. H. Snow.

FORFICULIDÆ.

Spongophora apicidentata Caudell.

Santa Rita mountains, 5000 to 8000 feet, July. F. H. Snow. One female.

This species has previously been recorded from localities in Arizona ranging from near a hundred feet to about five thousand feet above sea level.

BLATTIDÆ.

Ischnoptera notha Rehn and Hebard.

Santa Rita mountains, 5000 to 8000 feet, July. F. H. Snow. One female.

This specimen agrees with an individual of the same sex from the Huachuca mountains previously examined by the author.*

The measurements of the Santa Rita specimen are as follows:

Length of body	14.0 mm.
Length of pronotum	4.5
Greatest width of pronotum	5.9
Greatest width of tegmen	4.5
Length of tegmen	10.0

* Proc. Acad. Nat. Sci. Phila., 1907, p. 25 (*Uhleriana*); Rehn and Hebard, Ibid. 1910, p. 443.

In Arizona this species appears to be restricted to certain elevations on mountains of the southern part of the territory, viz., Santa Rita, Huachuca and Patagonia ranges.

Blattella dilatata (Saussure).

Santa Rita mountains, 5000 to 8000 feet, July. F. H. Snow. One female, one male.

These specimens agree with those recorded by the author* from the Huachuca mountains.

MANTIDÆ.

Bactromantis virga Scudder.

Santa Rita mountains, 5000 to 8000 feet, July. F. H. Snow. One female.

This specimen is slightly larger than a Huachuca mountains individual of the same sex.

PHASMIDÆ.

Pseudosermyle truncata Caudell.

Santa Rita mountains, 5000 to 8000 feet, July. F. H. Snow. One female.

Parabacillus coloradus Scudder.

Santa Rita mountains, 5000 to 8000 feet, June. F. H. Snow. Two males, one female.

ACRIDIDÆ.

Telmatettix aztecus Saussure.

Santa Rita mountains, 5000 to 8000 feet, June. F. H. Snow. One male.

Mermiria texana Bruner.

Santa Rita mountains, 5000 to 8000 feet, July. F. H. Snow. One female.

Prorocorypha,[1] n. gen.

Allied to *Paropomala* Scudder, but differing chiefly in the great development of the cephalic portion of the head, the greatly elongate supra-anal plate of both sexes and the sub-genital plate of the male.

Body sub-bacilliform. Head greatly elongate; vertex and pre-ocular region strongly produced into a rostrate process, fastigium lanceolate, tectate, carinate; antennæ, at least of male, somewhat triquetrous, subensiform. Cephalic and median limbs very small. Caudal limbs very slender. Pro-

* Proc. Acad. Nat. Sci. Phila., 1907, p. 26.

[1] πρωα, prow; κορυφη, head.

sternum with a median compressed protuberance; mesosternal lobes contiguous. Supra-anal plate aculeate in both sexes; subgenital plate of male strongly produced, knife-like.

Type: *P. snowi*, n. sp.

Prorocorypha snowi n. sp. (Plate 63.)

Types: ♂ and ♀ (not mature); Santa Rita mountains, Pima and Santa Cruz counties, Arizona, 5000 to 8000 feet, June (♂), July (♀), 1907. F. H. Snow. (University of Kansas.)

Size medium; form very elongate. Head one and one-half times the dorsal length of the pronotum, occiput with a hardly perceptible longitudinal arcuation; interocular region but little narrower than the greatest width of the fastigium; rostrum very long and deep, occupying nearly half the length of the head and the greater part of the depth; outline when seen from the side with fastigium slightly ascending from the interocular region, face nearly horizontal, inter-antennal portion rounded to the acute angulate fronto-fastigial angle; fastigium lanceolate, the greatest width contained twice (♂) or more than twice (♀) in the length, apex very narrowly rounded, lateral margins distinctly carinate, surface tectate, median carina as distinct as the lateral and extending to the inter-antennal region; lateral foveolæ very elongate, lanceolate; frontal costa narrow, very slightly but regularly expanding ventrad in the male, very narrow dorsad, expanding somewhat in the inter-antennal region and subequal ventrad in the female, in both sexes moderately sulcate and becoming obsolete before reaching the clypeal margin; eyes flattened, elongate ovate, not at all prominent; antennæ, in the male at least, slightly exceeding the head and entire thorax in length, thick, three-sided, one narrower than the others, ensiform. Pronotum about twice as long as its width, cephalic margin of dorsum truncato-rotundate, caudal margin truncate, median carina distinct; lateral lobes with the ventral margin truncate. Wings and tegmina undeveloped. Prosternum with a very distinct longitudinal rounded tubercle; mesosternal foramina considerably impressed. Abdomen with the segments considerably elongate; supra-anal plate in both sexes strongly produced, needle-like, its length being but very slightly less than the dorsal length of the pronotum; cerci somewhat compressed, simple, sub-styliform; subgenital plate of male produced into a compressed, slightly arcuate knife-like structure, slightly more than half again as long as the supra-anal plate; ovi-

positor jaws of the female placed well under the projecting supra-anal plate. Cephalic and median limbs very small; caudal femora reaching to the fifth abdominal segment, very slender, tapering; caudal tibiæ equal to the femora in length, armed on the external margin with fourteen to sixteen small spines.

General colors of female burnt carmine and apple green, the venter of the body and head ochraceous, the carmine strongest on the dorsum, the green only on the limbs; caudal femora yellowish proximad. Color of male destroyed by immersion in liquid preservative.

MEASUREMENTS.

	Male.	*Female.*
Length of body (including subgenital and supra-anal plates)	31.0 mm.	44.0 mm.
Length of head	5.5	7.2
Length of fastigium	2.7	3.8
Length of pronotum	3.2	5.0
Length of caudal femur	10.5	13.6
Length of supra-anal plate	3.4	4.4
Length of subgenital plate	5.0	

A single pair have been examined. Doctor McClung, of the University of Kansas, who has studied the spermatogenesis of this species and whose assistants collected specimens under Professor Snow, informs me that "specimens such as those you have were constantly caught *in copulo,* and a microscopical examination of the testes shows the spermatozoa well developed." The specimens in hand have the tegmina and wing pads in the reversed nymphal condition.

Eritettix variabilis (Bruner).

Santa Rita mountains, 5000 to 8000 feet, June and July. 1907. F. H. Snow. One male, four females.

One of the females in this series is in a greenish phase of coloration, while two of the remaining females have a pattern of chiefly solid contrasting colors. The green phase has the greater part of the head, dorsal half of the lateral lobes of the pronotum, the pale stripe on the tegmina and the dorsal face of the caudal femora apple green, while the strongly contrasted phase has broad seal brown postocular bars extending over the head and pronotum and regularly expanding in width, the dorsal aspect much lighter, either ochraceous or rust red, and the usual dark portions of the tegmina also seal brown. The supplementary carinæ of the pronotum are distinctly but not strongly indicated in two of the females, represented by the

merest traces in the female and completely absent in the two contrasting colored females.

The only previous Arizona record of this species is from Douglas, Cochise county.

Amphitornus ornatus McNeill.

Santa Rita mountains, 5000 to 8000 feet, June and July, 1907. F. H. Snow. One male, one female.

Cordillacris pima Rehn.

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. One male.

This species was known only from the Baboquivari mountains, Pima county, Arizona.

Psolæssa texana Scudder.

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. One female.

This specimen is in the blackish phase of coloration—the typical *texana* form.

Aulocara femoratum Scudder.

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. One male.

This species is now known in Arizona from the Huachuca and Santa Rita mountains, and from Phœnix.

Arphia aberrans Bruner.

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. One male, one female.

This species is now known from localities extending from the Huachuca range to Nogales, Ariz.

Hippiscus corallipes (Haldeman).

Santa Rita mountains, 5000 to 8000 feet, June and July, 1907. F. H. Snow. One male, one female.

Scirtetica ritensis, n. sp. (Plate 63.)

Type: ♀; Santa Rita mountains, Pima and Santa Cruz counties, Arizona. Elevation, 5000 to 8000 feet. July, 1907. F. H. Snow. (University of Kansas.)

A very beautiful species of the genus, differing from its allies in the absence of a median band on the wings, the dark color being on the periphery, in the color of the disk and in the heavy, robust build.

Size medium; form robust. Head with the extreme width very slightly greater than the greatest width of the cephalic

margin of the pronotum; occiput slightly arcuate longitudinally, the caudal section of vertex with a pair of distinctly impressed subpyriform areas; interocular region slightly wider than the fastigium, broadly and deeply sulcate; fastigium very greatly declivent, sulcate as in the interocular space, the sulcate portion, however, being slightly broader than between the eyes; frontal costa somewhat narrower than the fastigium dorsad, very gradually expanding ventrad to very near the clypeal suture, where the margins curve strongly laterad, sulcate ventrad to immediately dorsad of the ocellus, where the sulcus terminates abruptly, and from the ocellus ventrad it is present shallower and sub-obsolete as the clypeal suture is approached; lateral foveolæ lanceolate, trigonal, distinctly impressed; eyes broad, somewhat depressed ovoid in outline, about equal in length to the infra-ocular groove, moderately prominent when viewed from the dorsum; antennæ about equal to the dorsal length of the head and pronotum; ventral portion of head distinctly broader than the dorsal. Pronotum with the length of the disk about half again the dorsal length of the head, and with the greatest width of the disk but slightly shorter than the length; cephalic dorsal margin very slightly obtuse-angulate, caudal margin decidedly obtuse-angulate; lateral angles of the disk very distinct on the metazona and the cephalic portion of the prozona, broken and sub-obsolete mesad; median carina distinct, moderately elevated, straight, cut by the transverse sulcus very slightly cephalad of the middle; lateral lobes distinctly deeper than long, the cephalic and caudal margins obliquely emarginato-sinuate, ventro-caudal angle broadly rounded. Tegmina exceeding the tips of the caudal femora by slightly more than the length of the pronotum, moderately broad, slightly narrowing distad, the apex obliquely rotundato-truncate; intercalary vein prominent, through the greater part of its length closer to the median than to the ulnar vein. Wing with the greatest width contained one and one-thirds times in the length, apex sub-rectangulate with the distal portion of the costal margin arcuate. Mesosternal lobes with the interspace very strongly transverse; interspace between the metasternal lobes transverse. Caudal femora robust, the ventro-lateral carina distinctly lamellate, reaching its greatest expansion at two-fifths the distance from the apex, pattern of the paginæ distinct; caudal tibiæ slightly shorter than the femora, armed laterad with seven spines.

General colors vandyke brown and pea green, marbled and

blotched one over the other, the tegmina, dorsal face of the caudal femora and disk of the pronotum with the green predominating; ventral surface isabella color. Dorsum of the head and pronotum with a regular figure of green which is margined laterad with clove brown, this figure being constricted at the caudal margin of the head and almost severed mesad on the pronotum; antennæ clove brown annulate with pea green, their insertion bordered dorsad and ventrad by a pair of transverse lines of clove brown; eye walnut brown. Wings with the disk orange rufous, the distal and caudal margins with a moderately broad band of vandyke brown which fails to reach the proximal margin, ulnar tænia extending about half way to the base of the wing; apex with the smaller areas and a few of the short veins creamy white. Caudal femora with the dorsal face crossed by a median and a distomedian bar of clove brown, while the apex is touched with the same color, ventral sulcus washed with pale blue; caudal tibiæ turquoise blue with the lateral face of the proximal third greenish white and the extreme distal portion of the internal face blackish, leaving a pregenicular pale annulus, the apex dark blue, and a dark blue annulus placed next to the pale one; tarsal joints very pale ochraceous.

MEASUREMENTS.

Length of body	23.8 mm.
Length of pronotum	4.5
Length of caudal femur	12.0
Length of tegmen	21.0

The type specimen is the only one seen by the author.

Tomonotus aztecus (Saussure).

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. One male.

Mestobregma rubripenne (Bruner).

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. One male, one female.

Conozoa carinata Rehn.

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. One female.

Trimerotropis alliciens (Scudder).

Santa Rita mountains, 5000 to 8000 feet, June and July, 1907. F. H. Snow. Three males.

These specimens are somewhat smaller than a female from the Huachuca mountains.

Trimerotropis laticincta (Saussure).

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. One male, one female.

This species has previously been recorded from Nogales, Douglas and the Huachuca mountains in southern Arizona, and Flagstaff in northern Arizona.

Trimerotropis cyaneipennis (Bruner).

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. One female.

Heliastus benjamini Caudell.

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. One female.

This specimen has pale interrupted decussate markings on the pronotum.

Previous records of this species are from the Huachuca mountains, the Baboquivari mountains, and Nogales, Ariz.

Heliastus aridus (Bruner).

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. One male.

Dactylotum variegatum (Scudder).

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. Two females.

TETTIGONIDÆ.

Arethæa sellata Rehn.

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. One male.

This is the first record of the species outside of the Huachuca mountains.

Scudderia furcifera (Scudder).

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. One male.

GRYLLIDÆ.

Gryllus alogus Rehn.

Santa Rita mountains, 5000 to 8000 feet, July, 1907. F. H. Snow. Two females.

These specimens measure as follows:

Length of Pronotum.	*Tegmen.*	*Caudal femur.*	*Ovipositor.*
4.0 mm.	9.0 mm.	12 mm.	14.5 mm.
3.3	5.5	11	13.8

This species has been recorded from the Huachuca mountains and Phœnix, in addition to Albuquerque, the type locality.